

Aviation Data Bases Dealing with Flight Scheduling, Flight Operations, and Delay

A. Database Description

Several data sources were used in developing and verifying the capacity benchmarks. Not all sources are equivalent or designed to measure the same thing. The basic use of each data set and general differences between them are described below.

1. Operations Network (OPSNET): This FAA data source is designed to measure the performance of the FAA flight control system. A flight is deemed under FAA control when it leaves the departure gate, and is released from FAA control when the flight arrives at the arrival gate. Elapsed flight times are compared to flight plans filed with the FAA, which may differ from published carrier schedules. Delays under OPSNET are counted when elapsed flight time exceeds flight plan times filed with the FAA by 15 minutes. OPSNET data was used for delay comparisons in this study.
2. Aviation System Performance Metrics (ASPM): This FAA data source was originally a cooperative venture between 10 air carriers and the FAA to supply detailed flight data for flights to and from 21 major airports. The ASPM database has been expanded to include flight data from the Enhanced Traffic Management System (ETMS) (computer records of all instrument flight rule flights), ground and flight movement times from Aeronautical Radio, Inc. (for those aircraft equipped with electronic sensors), and data reported in the Airline Service Quality Performance database. Flight times can be compared to carrier flight plans filed with the FAA or with air carrier schedules from the *Official Airline Guide* (OAG) and carrier reservation systems. With the exception of Honolulu, for which ASPM data are not available, flight data in this study is from the ASPM database.
3. Airline Service Quality Performance (ASQP): This DOT data source is designed to measure whether carrier flight performance meets published carrier schedules (from OAG or carrier reservation systems). Flight data are required to be reported for major carrier operations to and from the 31 large hubs. (The 31 required airports in ASQP differ from the benchmark study in that the large hubs include Chicago Midway and Portland, Oregon, and exclude Memphis and Honolulu.) In practice, the carriers report all scheduled service flight data. Flights are counted as delayed when they do not pull back from the departure gate within 15 minutes of scheduled departure time, or if they do not arrive at the arrival gate within 15 minutes of the scheduled arrival time. February 2001 data in the following table are taken from the April edition of the *Air Travel Consumer Report*.

B. Database Delay Comparison

The following table lists and ranks the 31 airports by OPSNET delays per 1,000 operations. Again using OPSNET data, the airports are additionally ranked by the number of delays. However, both the rate of delay and the total number of delays do not give the duration of delay. Using ASPM data for arriving flights, the 31 airports are ranked by average arrival delay. Finally, using ASQP data, the 31 airports are again ranked (inversely) by arrivals, showing the percentage of flight arrivals that are on time.